UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,510	02/19/2002	Seung June Yi	2101-3187	3418

35884 7590 03/10/2006

LEE, HONG, DEGERMAN, KANG & SCHMADEKA, P.C.
801 SOUTH FIQUEROA STREET
14TH FLOOR
LOS ANGELES, CA 90017

EXAMINER	
WONG, BLANCHE	
ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/076,510	YI ET AL.	
	Examiner	Art Unit	
	Blanche Wong	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Feb'02,Mar'04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the buffer usage must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Objections

2. Claim 28 objected to because of the following informalities: miscellaneous (a) in ln. 2. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 13,19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 19, both in ln. 2, what is – control protocol data units --.

5. There is insufficient antecedent basis for this limitation in the claim.

Claim 13, ln. 4, and claim 19, ln. 1-2, recite the limitation "the amount of control protocol data units".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1-31** are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shin (U.S. Pat No. 6,640,105).

With regard to claim 1, Shin discloses

measuring a buffer occupancy (transport MAC buffers, col. 6, ln. 32) of one or more radio bearers (RAB1,RAB2,RAB3, col. 4, ln. 31-32) mapped to the transport channel (CCTrCH, col. 4, ln. 35);

calculating the traffic volume of the transport channel by summing the measured buffer occupancies of the one or more radio bearers (a sum of data existing at the transport RLC buffers and the transport MAC buffers, and which corresponds to the traffic volume transported through CCTrCH, col. 6, ln. 31-34); and

reporting measurement results (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47) for the one or more radio bearers mapped to the transport channel.

With regard to claim 2, Shin discloses the method of claim 1 and the measurement results include at least one of the measured buffer occupancy (the

transport RLC buffers and the transport MAC buffers, col. 6, ln. 32), a variance of buffer occupancies (deviations, col. 5, ln. 40) measured during a measuring time interval (a given time period, col. 5, ln. 39), and an average of buffer occupancies (averages, col. 5, ln. 39) measured during the measuring time interval (a given time period, col. 5, ln. 39), for each radio bearer (RAB1,RAB2,RAB3, col. 5, ln. 37) mapped to the transport channel (CCTrCH, col. 5, ln. 31).

With regard to claim 3, Shin discloses the method of claim 1 and a MAC layer measures the buffer occupancy (MAC measures the sum of data ..., col. 6, ln. 31) and the measurement results are reported to a RRC layer (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47).

With regard to claim 4, Shin discloses the method of claim 3 and receiving measurement information (measurement parameter) from an upper layer (MAC is provided with measurement parameters ... from the RRC, col. 6, ln. 24-26), wherein the measure information (measurement parameter) includes a reporting quantity identifier (critical values THu and THl, col. 6, ln. 25-26).

With regard to claim 5, Shin discloses the method of claim 4 and the upper layer is the RRC layer (MAC is provided with measurement parameters ... from the RRC, col. 6, ln. 24-26).

With regard to claim 6, Shin discloses the method of claim 1 and the buffer occupancy is the amount of data that is available for transmission in a RLC layer (The MAC provides the upper RLC with logical channels and the data transfer service on the logical channels, col. 2, ln. 11 and 13-14).

With regard to claim 7, Shin discloses the method of claim 1 and the buffer occupancy represents an occupancy of a RLC buffer (the transport RLC buffers, col. 6, ln. 31-32) of an RLC entity (RLC).

With regard to claim 8, Shin discloses

receiving measurement information (a measurement report mode and a measurement period parameter, col. 4, ln. 61-62) from an upper layer (UE-RRC, col. 4, ln. 60), said measurement information including a reporting period (measurement period);

measuring a buffer occupancy (transport MAC buffers, col. 6, ln. 32) of one or more radio bearers (RAB1,RAB2,RAB3, col. 4, ln. 31-32) mapped to the transport channel (CCTrCH, col. 4, ln. 35); and

checking whether said reporting period is expired (it is inherent where there is measurement period, there is checking whether a reporting period is expired to allow the next measurement period to begin); and

sending a measurement report (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47) to said upper layer (RRC) for each radio bearer.

With regard to claim 9, Shin discloses the method of claim 8 and repeating the measuring and sending operations for *each* of a plurality of reporting periods [with emphasis]. (Shin does for at least one measurement period, see claim 8.)

With regard to claim 10, Shin discloses the method of claim 9 and a measurement report that includes at least one of the measured buffer occupancy (the transport RLC buffers and the transport MAC buffers, col. 6, ln. 32) during said reporting period (a given time period, col. 5, ln. 39), a variance of buffer occupancies (deviations, col. 5, ln. 40) measured during said reporting period (a given time period, col. 5, ln. 39), and an average of buffer occupancies (averages, col. 5, ln. 39) measured during said reporting period (a given time period, col. 5, ln. 39), for each radio bearer (RAB1,RAB2,RAB3, col. 5, ln. 37).

With regard to claim 11, Shin discloses the method of claim 8 and an upper layer that is the RRC layer (MAC is provided with measurement parameters ... from the RRC, col. 6, ln. 24-26).

With regard to claim 12, Shin discloses the method of claim 8 and a buffer occupancy that represents an occupancy of a RLC buffer (the transport RLC buffers, col. 6, ln. 31-32) of an RLC entity (RLC).

With regard to claim 13, Shin discloses the method of claim 12 and a RLC buffer occupancy that includes the amount of control protocol data units (data inclusive of the respective buffer states, col. 5, ln. 9) generated by said RLC entity.

With regard to claim 14, Shin discloses the method of claim 11 and a RRC layer that is a UE-RRC layer (UE-RRC), and the UE-RRC layer quantizes said measurement report (measurement results) for sending to a RND-RRC layer (UTRAN-RRC) (the UE-RRC provides the measurement results on the buffer states to the UTRAN-RRC, col. 5, ln. 46-48).

With regard to claim 15, Shin discloses

receiving measurement information (a measurement report mode and a measurement period parameter, col. 4, ln. 61-62) from an upper layer (UE-RRC, col. 4, ln. 60), said measurement information including a range of permissible traffic volume (between Thu and Thl where Thu denotes a greatest boundary traffic volume and Thl denotes a smallest boundary traffic volume, col. 5, ln. 1-4) for the transport channel;

measuring a buffer occupancy (transport MAC buffers, col. 6, ln. 32) of one or more radio bearers (RAB1,RAB2,RAB3, col. 4, ln. 31-32) mapped to the transport channel (CCTrCH, col. 4, ln. 35);

obtaining a traffic volume of the transport channel by calculating a total sum of said one or more buffer occupancies (a sum of data existing at the transport RLC buffers and the transport MAC buffers, and which corresponds to the traffic volume transported through CCTrCH, col. 6, ln. 31-34); and

sending a measurement report (result to said upper layer (RRC) for each radio bearer whose traffic volume is out of said range (if the traffic volume measurement of the channel CCTrCH falls outside the range between THu and THl, then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 42-47).

With regard to claim 16, Shin discloses the method of claim 15 and the measurement report includes at least one of the measured buffer occupancy (the transport RLC buffers and the transport MAC buffers, col. 6, ln. 32), a variance of buffer occupancies (deviations, col. 5, ln. 40) measured during a measuring time interval (a given time period, col. 5, ln. 39), and an average of buffer occupancies (averages, col. 5, ln. 39) measured during the measuring time interval (a given time period, col. 5, ln. 39), for each radio bearer (RAB1,RAB2,RAB3, col. 5, ln. 37) mapped to the transport channel (CCTrCH, col. 5, ln. 31).

With regard to claim 17, Shin discloses the method of claim 15 and the upper layer is the RRC layer (MAC is provided with measurement parameters ... from the RRC, col. 6, ln. 24-26).

With regard to claim 18, Shin discloses the method of claim 15 and the buffer occupancy of each radio bearer represents an occupancy of a RLC buffer (the transport RLC buffers, col. 6, ln. 31-32) of an RLC entity (RLC).

With regard to claim 19, Shin discloses the method of claim 18 and a RLC buffer occupancy that includes the amount of control protocol data units (data inclusive of the respective buffer states, col. 5, ln. 9) generated by said RLC entity.

With regard to claim 20, Shin discloses the method of claim 17 and the RRC layer is a UE-RRC layer (UE-RRC), and the UE-RRC layer quantizes said measurement report (measurement results) for sending to a RND-RRC layer (UTRAN-RRC) (the UE-RRC provides the measurement results on the buffer states to the UTRAN-RRC, col. 5, ln. 46-48).

With regard to claim 21, Shin discloses

(a) measuring a buffer usage (transport MAC buffers, col. 6, ln. 32) of one or more radio bearers (RAB1,RAB2,RAB3, col. 4, ln. 31-32) mapped to the transport channel (CCTrCH, col. 4, ln. 35);

(b) combining (sum) the measured buffer usage of the one or more radio bearers (a sum of data existing at the transport RLC buffers and the transport MAC buffers, and which corresponds to the traffic volume transported through CCTrCH, col. 6, ln. 31-34); and

(c) reporting the combined buffer usage (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47) for the transport channel to an upper protocol layer (RRC).

With regard to claim 22, Shin discloses the method of claim 21 and the steps (a),(b), and (c) are performed for *each* of a plurality of transport channels [with emphsis]. (Shin does for at least one transport channel, see claim 21.)

With regard to claim 23, Shin discloses the method of claim 21, and wherein (a), (b), and (c) are performed by a MAC layer (MAC, col. 6, ln. 24), of a 3GPP architecture (col. 1, ln. 34), and the combined buffer usage is communicated to a RRC layer (RRC) (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47).

With regard to claim 24, Shin discloses the method of claim 23 and the RRC layer re-maps (multiplexed, col. 4, ln. 32 and 34) the one or more radio bearers (RAB1, RAB2, RAB3, col. 4,ln. 31-32) to one or more transport channels (DCH1,DCH2, col. 4,ln. 32-33) in accordance with the reported combined buffer usage.

With regard to claim 25, Shin discloses the method of claim 23 and the transport channel (CCTrCH, col. 4,ln. 35) is *either* a common transport channel *or* a dedicated transport channel and the RRC layer (RRC, col. 4, ln. 31) converts (multiplexed, col. 4, ln. 33-34) the common transport channel into the dedicated transport channel *or* the dedicated transport channel (DCH1, DCH2, col. 4, ln. 33) into the common transport channel (CCTrCH) in accordance with the reported combined buffer usage [with emphasis].

With regard to claim 26, Shin discloses the method of claim 21 and

comparing (compare, col. 6, ln. 35) the measured buffer usage (the traffic column measurement of the channel CCTrCH corresponds to data existing at the transport RLC buffer and the transport MAC buffer, col. 32-36) of each radio bearer (RAB1,RAB2,RAB3, col. 4, ln. 31-32) to a usage range (THu and THl, col. 6, ln. 40-41); and

reporting (if the traffic volume measurement of the channel CCTrCH falls outside of the range between THu and THl, then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 42-47) the measured buffer usage (traffic volume measurement) for each radio bearer to the upper protocol layer (RRC) when the measured buffer usage (traffic volume measurement) is not within the usage range (range between THu and THl).

With regard to claim 27, Shin discloses the method of claim 21 and

determining if a predetermined time period (measurement period, col. 4, ln. 61-62) has expired (it is inherent where there is measurement period, there is checking whether a reporting period is expired to allow the next measurement period to begin); and

reporting the measured buffer usage (traffic volume measurement) for each radio bearer (RAB1,RAB2,RAB3, col. 5, ln. 37) to the upper protocol layer (RRC) (then the result of the traffic volume measurement of the channel CCTrCH is provided to the RRC, col. 6, ln. 46-47) when a predetermined time period has expired (measurement

period, col. 4, ln. 61-62) (it is inherent that reporting is done after a measurement period).

With regard to claim 28, Shin discloses the method of claim 21 and

executing multiple times during a time interval (measurement report mode is a periodic mode, col. 4, ln. 63);

calculating, for each radio bearer (respective buffer data, col. 5, ln. 40) during the time interval (a given time period, col. 5, ln. 39), an average buffer usage (averages, col. 5, ln. 39) using the multiple buffer usage measurements;

calculating, for each radio bearer (respective buffer data, col. 5, ln. 40) during the time interval (a given time period, col. 5, ln. 39), a buffer usage variance (deviations, col. 5, ln. 40) using the multiple buffer usage measurements; and

reporting (the measurement results reported to the UE-RRC, col. 5, ln. 32), for each radio bearer, a usage report (statistic values, col. 5, ln. 38) comprising at least one of the average buffer usage (averages, col. 5, ln. 39) and the buffer usage variance (deviations, col. 5, ln. 40) to the upper protocol layer (UE-RRC).

With regard to claim 29, Shin further discloses an upper protocol layer re-maps (multiplexed, col. 4, ln. 32 and 34) the one or more radio bearers (RAB1, RAB2, RAB3, col. 4,ln. 31-32) to one or more transport channels (DCH1,DCH2, col. 4,ln. 32-33) in accordance with the usage report.

With regard to claim 30, Shin discloses the method of claim 21 and values of the measured buffer usage for the one or more radio bearers are combined by summing the values (a sum of data existing at the transport RLC buffers and the transport MAC buffers, and which corresponds to the traffic volume transported through CCTrCH, col. 6, ln. 31-34).

With regard to claim 31, Shin discloses

a detection means for measuring a buffer usage (transport MAC buffers, col. 6, ln. 32) of one or more radio bearers (RAB1,RAB2,RAB3, col. 4, ln. 31-32) mapped to the transport channel (CCTrCH, col. 4, ln. 35);

a summing means fo combining (sum) the measured buffer usage for the one or more radio bearers (a sum of data existing at the transport RLC buffers and the transport MAC buffers, and which corresponds to the traffic volume transported through CCTrCH, col. 6, ln. 31-34);

an averaging means for determining an average buffer usage (averages, col. 5, ln. 39), for each radio bearer (respective buffer data, col. 5, ln. 40) during the time interval (a given time period, col. 5, ln. 39), using the multiple buffer usage measurements made by the detection means;

a variance determining means for determining a buffer usage variance (deviations, col. 5, ln. 40), for each radio bearer (respective buffer data, col. 5, ln. 40) during the time interval (a given time period, col. 5, ln. 39), using the multiple buffer usage measurements made by the detection means; and

an inter-layer communication means for communicating a usage report (the measurement results reported to the UE-RRC, col. 5, ln. 32) comprising at least one of the summed measured buffer usage (statistic values, col. 5, ln. 38; see also sum, col. 6, ln. 31), the average buffer usage (averages, col. 5, ln. 39) for each radio bearer, and the buffer usage variance (deviations, col. 5, ln. 40) for each radio bearer, to an upper protocol layer (UE-RRC).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW

BW
March 3, 2006

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600